

WHAT IS CLAIMED IS:

Sub (B)

1. A semiconductor laser device including first and second laser units, each unit having a ridge type structure and each unit comprising a multilayer structure body made of at least an n-type semiconductor layer, an active layer and a p-type semiconductor layer deposited in this order, and a p-side electrode and an n-side electrode, wherein the p-side electrode and the n-side electrode of the first laser unit and the n-side electrode and the p-side electrode of the second laser unit are electrically connected, respectively.

2. The semiconductor laser device according to claim 1, wherein the p-side electrode and the n-side electrode of the first laser unit and the n-side electrode and the p-side electrode of the second laser unit are electrically connected, respectively, through respective connecting layers.

Sub C

3. The semiconductor laser device according to claim 2, wherein the first and second laser units are disposed in an opposing fashion with each other with an insulating layer interposed between the first and second laser units.

Sub D

4. The semiconductor laser device according to claim 2 ~~or 3~~, wherein at least one of the connecting layers has a Schottky barrier.

5. The semiconductor laser device according to any of claims 1

~~to 3, wherein at least one of the first and second laser units has a Schottky barrier between the p-side electrode and the p-type semiconductor layer.~~

~~6. A semiconductor laser device according to any of claims 1 to 5, wherein at least one of the first and second laser units is a semiconductor laser having a gallium nitride (GaN) system semiconductor deposited.~~

7. A method of fabricating a semiconductor laser device, the method comprising:

~~a laser assembly forming step composed of a step for forming a multilayer structure body having at least an n-type semiconductor layer, an active layer and a p-type semiconductor layer deposited on a substrate, a step for partly removing a top portion of the multilayer structure body so as to expose the n-type semiconductor layer, thus forming a ridge in a stripe fashion, and a step for forming a first electrode on the top portion of the ridge and a second electrode on the lower portion by the ridge;~~

~~a step for preparing a couple of, or first and second laser assemblies by repeating the laser assembly forming step;~~

~~a step for bringing the first laser assembly and the second laser assembly into registration with each other so that the first electrode and the second electrode of the first laser assembly are brought to opposition to the second electrode and the first electrode of the second laser assembly with a fusing~~

material interposed therebetween;

a step for intimately attaching the first and second laser assemblies with each other and melting the fusing material to bond the first and second laser assemblies with each other;

a step for removing at least the substrate of an insulating property from the first and second laser assemblies; and

a step for forming an electrode on the bottom of the n-type semiconductor layer of the first and second laser assemblies.

8. The method of fabricating a semiconductor laser device according to claim 7, wherein the step for registration includes a step for supplying a fusing material onto at least either of the first electrode of the first laser assembly or the second electrode of the second laser assembly, and a step for supplying a fusing material onto at least either of the second electrode of the first laser assembly or the first electrode of the second laser assembly.

9. The method of fabricating a semiconductor laser device according to claim 8, wherein at least one of the first and second laser assemblies is a gallium nitride system laser.

10. The method of fabricating a semiconductor laser device according to claim 9, wherein the substrate is made of sapphire, and the removing step is a step of irradiating laser light of a

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x2  
cmp.

wavelength of 200 to 300 nm ~~from~~ from the back side of the substrate.

x20  
x37

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